

**APPEAL BRIEF**

Paul J. Esatto, Jr.  
Attorney for Appellants  
Registration No.: 30,749

Scully, Scott, Murphy & Presser, P.C.  
400 Garden City Plaza, Suite 300  
Garden City, New York 11530  
(516) 742-4343

## TABLE OF CONTENTS

	<u>PAGE</u>
I. REAL PARTY IN INTEREST	2
II. RELATED APPEALS AND INTERFERENCES	2
III. STATUS OF CLAIMS	2
IV. STATUS OF AMENDMENTS	4
V. SUMMARY OF CLAIMED SUBJECT MATTER	4
INDEPENDENT CLAIM 1	5
INDEPENDENT CLAIM 13	5
DEPENDENT CLAIM 14	6
VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL	7
VII. ARGUMENTS	7
VIII. CONCLUSION	15
IX. CLAIMS APPENDIX	17
X. EVIDENCE APPENDIX	20
XI. RELATED PROCEEDINGS APPENDIX	21

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

<b>Applicants:</b>	Assaf Govari et al.	<b>Examiner:</b>	Fangemonique A. Smith
<b>Serial No.:</b>	09/882,126	<b>Art Unit:</b>	3736
<b>Filed:</b>	June 15, 2001	<b>Docket:</b>	BIO0136USNP (23277)
<b>For</b>	METHOD FOR MEASURING TEMPERATURE AND OF ADJUSTING FOR TEMPERATURE SENSITIVITY WITH A MEDICAL DEVICE HAVING A POSITION SENSOR	<b>Dated:</b>	January 24, 2011

**Confirmation No.:** 8637

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**APPEAL BRIEF**

Sir:

Pursuant to 35 U.S.C. § 134 and 37 C.F.R. § 41.37, entry of this Appeal Brief in support of the Notice of Appeal filed November 22, 2010 in the above-identified matter is respectfully requested. This brief sets forth the authorities and arguments upon which Appellants rely in support of the appeal from the Final Rejection of Claims 1-21 in the above-identified patent application. The rejection of Claims 1-21 currently remains.

---

**CERTIFICATION OF ELECTRONIC FILING**

I hereby certify that this correspondence is being deposited with the United States Patent and Trademark Office via Electronic Filing through the United States Patent and Trademark Office e-business website.

Dated: January 24, 2011

\_\_\_\_\_  
/Paul J. Esatto, Jr./  
Paul J. Esatto, Jr.

## **I. REAL PARTY IN INTEREST**

Biosense Webster, Inc., a California Corporation, is the real party in interest.

## **II. RELATED APPEALS AND INTERFERENCES**

There are no other appeals or interferences known to Appellants, Appellants' legal representative or Assignee, which would directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

## **III. STATUS OF CLAIMS**

Claims 1-21 are pending in the application.

Claim 1 stands rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 5,755,715 to Stern et al., (hereinafter "Stern") in view of U.S. Patent No. 6,752,804 to Simpson (hereinafter "Simpson") and U.S. Patent No. 6,334,093 to More (hereinafter "More").

Claim 2 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Stern in view of Simpson and More.

Claim 3 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Stern in view of Simpson and More.

Claim 4 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Stern in view of Simpson and More.

Claim 5 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Stern in view of Simpson and More.

Claim 6 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Stern in view of Simpson, More and U.S. Patent No. 5, 833,608 to Acker (hereinafter "Acker").

Claim 7 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Stern in view of Simpson, More and Acker.

Claim 8 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Stern in view of Simpson, More and Acker.

Claim 9 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Stern in view of Simpson and More.

Claim 10 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Stern in view of Simpson and More.

Claim 11 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Stern in view of Simpson and More.

Claim 12 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Stern in view of Simpson and More.

Claim 13 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Stern in view of Simpson and More.

Claim 14 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Stern in view of Simpson and More.

Claim 15 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Stern in view of Simpson and More.

Claim 16 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Stern in view of Simpson, More and U.S. Patent No. 5, 638,418 to Douglas et al. (hereinafter “Douglas”).

Claim 17 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Stern in view of Simpson, More and Douglas.

Claim 18 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Stern in view of Simpson, More and Douglas.

Claim 19 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Stern in view of Simpson, More and Douglas.

Claim 20 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Stern in view of Simpson, More and Douglas.

Claim 21 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Stern in view of Simpson, More and Douglas.

Claims 1-21 are presented on appeal and set forth fully in the attached Claims Appendix.

#### **IV. STATUS OF AMENDMENTS**

Appellants filed an Amendment under 37 C.F.R. §1.116 on September 24, 2010 in response to the final Official Action dated June 24, 2010. The Amendment was not entered, as indicated in the Advisory Action dated October 14, 2010. Accordingly, the claims in the Claims Appendix reflect the version of the claims in the Amendment under 37 C.F.R. §1.111 submitted on March 29, 2010.

Appellants timely filed a Notice of Appeal on November 22, 2010. Therefore, the claims are pending as set forth in the Claims Appendix.

#### **V. SUMMARY OF CLAIMED SUBJECT MATTER**

Appellants note that reference numbers, figure numbers and references to passages in the specification used in this section and other sections of the Appeal Brief are provided merely for

the benefit of the Board and for meeting the requirements set forth in 37 C.F.R. § 41.37(c)(v) and are not meant to limit the scope of the claimed subject matter in any manner.

#### **INDEPENDENT CLAIM 1**

A first aspect of the invention, as recited in Claim 1, is directed to a method for measuring temperature at a site within a patient during a medical procedure (e.g., Figs. 1A, 1B, 2, 3A, 3B, 4 and 5; Table 1; and Page 31, Line 6-Page 34, Line 13), the method comprising the steps of: providing a medical device 80 having a position sensor 10 for providing signals used in determining position and/or orientation coordinates of the position sensor 10 (e.g., Page 9, Lines 8-14 and Page 33, Lines 1-5); placing the medical device 80 within the patient and positioning the position sensor 10 at the site (e.g., Page 33, Lines 1-5); determining position and/or orientation coordinates of the position sensor 10 based on the signals provided by the position sensor 10 using a location system 30 (e.g., Page 9, Lines 8-14; Page 13, Lines 20-23; and Page 33, Lines 5-8); providing a temperature measurement signal to the position sensor 10 (e.g., Page 31, Lines 23-28); measuring voltage at the position sensor 10 (e.g., Page 31, Lines 23-28); determining a resistance value at the position sensor 10 based on the temperature measurement signal provided to the position sensor 10 and the voltage at the position sensor 10 (e.g., Page 32, Lines 20-28; Table 1; and Figs. 3A and 3B); and determining a temperature value at the position sensor 10 based on the resistance value at the position sensor 10 (e.g., Page 32, Lines 20-28; Table 1; and Figs. 3A and 3B).

#### **INDEPENDENT CLAIM 13**

A second aspect of the invention, as recited in Claim 13, is directed to a method for adjusting for temperature sensitivity of a medical device having a position sensor (e.g., Figs. 1A, 1B, 2, 3A, 3B, 4 and 5; Table 1; and Page 31, Line 6-Page 34, Line 13), the method comprising the steps of: providing a medical device 80 having a position sensor 10 for providing signals

used in determining position and/or orientation coordinates of the position sensor 10 (e.g., Page 9, Lines 8-14 and Page 33, Lines 1-5); determining position and/or orientation coordinates of the position sensor 10 based on the signals provided by the position sensor 10 using a location system 30 (e.g., Page 9, Lines 8-14; Page 13, Lines 20-23; and Page 33, Lines 5-8); measuring voltage at the position sensor 10 (e.g., Page 31, Lines 23-28); determining a resistance value at the position sensor 10 based on the measured voltage at the position sensor 10 (e.g., Page 32, Lines 20-28; Table 1; and Figs. 3A and 3B); determining a temperature value at the position sensor 10 based on the resistance value (e.g., Page 32, Lines 20-28; Table 1; and Figs. 3A and 3B); and determining a sensitivity at the position sensor 10 based on the temperature value (e.g., Page 10, Lines 19-25 and Page 32, Lines 20-29).

#### **DEPENDENT CLAIM 14**

A third aspect of the invention, as recited in Claim 14, is directed to a method for adjusting for temperature sensitivity of a medical device having a position sensor (e.g., Figs. 1A, 1B, 2, 3A, 3B, 4 and 5; Table 1; and Page 31, Line 6-Page 34, Line 13), the method comprising the steps of: providing a medical device 80 having a position sensor 10 for providing signals used in determining position and/or orientation coordinates of the position sensor 10 (e.g., Page 9, Lines 8-14 and Page 33, Lines 1-5); determining position and/or orientation coordinates of the position sensor 10 based on the signals provided by the position sensor 10 using a location system 30 (e.g., Page 9, Lines 8-14; Page 13, Lines 20-23; and Page 33, Lines 5-8); measuring voltage at the position sensor 10 (e.g., Page 31, Lines 23-28); determining a resistance value at the position sensor 10 based on the measured voltage at the position sensor 10 (e.g., Page 32, Lines 20-28; Table 1; and Figs. 3A and 3B); determining a temperature value at the position sensor 10 based on the resistance value (e.g., Page 32, Lines 20-28; Table 1; and Figs. 3A and



3B); determining a sensitivity at the position sensor 10 based on the temperature value (e.g., Page 10, Lines 19-25 and Page 32, Lines 20-29); and adjusting location information from the position sensor based on the sensitivity (e.g., Page 10, Lines 19-25).

Each of the features recited in dependent Claims 2-12 and 15-21 are described in the Specification (e.g., Page 9, Line 8 through Page 11, Line 27; and Page 31, Line 6-Page 34, Line 13).

## **VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

1. Final rejection of Claims 1-5 and 9-15 under 35 U.S.C. § 103(a) as unpatentable over Stern in view of Simpson and More.
2. Final rejection of Claims 6-8 under 35 U.S.C. § 103(a) as unpatentable over Stern in view of Simpson, More and Acker.
3. Final rejection of Claims 16-21 under 35 U.S.C. § 103(a) as unpatentable over Stern in view of Simpson, More and Douglas.

## **VII. ARGUMENTS**

1. The rejection of Claims 1-5 and 9-15 under 35 U.S.C. § 103(a) as unpatentable over Stern in view of Simpson and More is improper and should be reversed.

### 1.A. Claims 1-5 and 9-13 are patentable over Stern, Simpson and More.

Stern is directed to an apparatus for ablating heart tissue using energy emitted from an energy source. Specifically, Stern discloses a temperature sensor (30), in the form of a thermistor, carried by the distal tip (16) of a catheter (14) for directly measuring a temperature (*see*, Col. 6, Lines 15-17):

The temperature control signal  $T_{\text{CONTROL}}$  input is based upon the actual instantaneous temperature conditions sensed  $T_{M(t)}$  by the sensing element 30.

Thus, Stern only teaches the application of a temperature sensor for measuring a temperature at a site within a patient.

Additionally, Stern teaches that a temperature set curve is defined to allow thermal mapping (*see*, Col. 2, Lines 25-30):

In one embodiment, the temperature set curve includes a first region of temperature values over time that are below tissue ablating temperatures to allow thermal mapping, as well as a second region of temperature values over time that are at tissue ablating temperatures. This temperature set curve coordinates thermal mapping with tissue ablation.

However, nowhere does Stern teach or fairly suggest that the thermal mapping technique is used to determine or indicate the position of an ablation electrode. Thus, Appellants respectfully disagree with the Examiner's allegation that the Stern "discloses thermal mapping and techniques which indicate the position of the medical device" (*see*, Page 3, Line 2-3 of the final Official Action dated June 24, 2010). In fact, the description of Stern on page 2 of the Office Action makes no mention of position determination whatsoever.

Furthermore, the Examiner has acknowledged that Stern does not disclose the use of a position sensor. Accordingly Stern fails to teach or suggest the steps of: providing a medical device having a position sensor for providing signals used in determining position and/or orientation coordinates of the position sensor; and determining position and/or orientation coordinates of the position sensor based on the signals provided by the position sensor using a location system, as recited in Claims 1 and 13. In addition, Stern also fails to teach or suggest any of the steps, recited in Claims 1 and 13, associated with the position sensor, for example, the step of determining a resistance value at the position sensor based on measured voltage at the position sensor; determining

a temperature value at the position sensor based on the resistance value; and determining a sensitivity at the position sensor based on the temperature value.

The Examiner has relied on Simpson for the alleged teaching of a position sensor and the steps associated with the position sensor.

The Examiner alleged that Simpson discloses a catheter having a plurality of electrodes, each with multiple thermal sensors attached and used to position the electrodes proximal to biological tissue of interest (*see* Page 3, Lines 4-6 of the final Official Action dated June 24, 2010).

However, Simpson teaches assessment of thermal sensor positions based on the thermal readings of the sensor. Simpson discloses at Col. 3, Lines 53-62 (cited by the Examiner):

Hence, those skilled in the art have recognized a need for providing an RF ablation system having a catheter with an electrode carrying multiple thermal sensors for providing temperature readings at a plurality of locations on the electrode and for presenting those readings in a manner which assists in the assessment of both electrode position and thermal sensor position relative to the ablation tissue. The need for automatic control of the energy level applied to an electrode, in view of the electrode and thermal sensor position assessment, has also been recognized (emphasis added).

In view of the above recognized need, Simpson discloses an apparatus for determining the position of a plurality of thermal sensors relative to biological tissue undergoing the application of energy (Col. 4, Lines 6-8 of Simpson). Specifically, the apparatus includes a device for commonly carrying the thermal sensors; a catheter for carrying the device and positioning the device proximal the biological tissue; and a processor responsive to the thermal sensors for determining the temperature of each thermal sensor (Col. 4, Lines 9-13 of Simpson). The apparatus also includes a display responsive to the processor for providing a graphic representation of the temperature of each thermal sensor relative to the temperature of each of

the other thermal sensors wherein the graphic representation is indicative of the proximity of the thermal sensors to the biological tissue (Co. 4, Lines 13-19 of Simpson).

By providing a graphic representation of the temperature of each thermal sensor relative to the temperature of each of the other thermal sensors that is indicative of the proximity of the thermal sensors to the biological tissue, the user is provided with additional information that may aid in deciding whether to adjust the position or orientation of the device relative to the tissue and whether to adjust the applied electrical energy to the catheter's device during the application of therapy. Specifically, Simpson discloses that the graphic representation is in a form of a spread (132), which indicates the temperature disparity between two adjacent thermal sensors. Since a thermal sensor proximal to the tissue surface normally feeds back higher readings and a thermal sensor distal to the tissue surface normally feeds back lower readings, the approximate position of the device with respect to the surface of tissue can be estimated.

Furthermore, Simpson discloses the device (16) includes twelve band electrodes (32) arranged in a substantially linear array along the distal segment (34) of the catheter (30). Each band electrode has a thermal sensor (40) mounted to it. Each thermal sensor (40) provides a temperature signal, which is indicative of the temperature of the respective band electrode (32) at that sensor.

Thus, although Simpson teaches assisting in the assessment of both electrode position and thermal sensor position based on the thermal readings of the thermal sensor, Simpson does not disclose a position sensor for providing signals used in determining position and/or orientation coordinates of the position sensor, as recited in Claims 1 and 13 on appeal.

Furthermore, Simpson teaches assessing thermal sensor positions based on the thermal readings; in contrast, Claims 1 and 13 recite determining a temperature value at the position

sensor based on the resistance value at the position sensor, which is determined by providing a temperature measurement signal to the position sensor, measuring voltage at the position sensor and determining the resistance value based on the temperature measurement signal and the measured voltage.

Accordingly, Simpson does not teach or suggest the steps of: providing a medical device having a position sensor for providing signals used in determining position and/or orientation coordinates of the position sensor; and determining position and/or orientation coordinates of the position sensor based on the signals provided by the position sensor using a location system, as recited in Claims 1 and 13 on appeal. Also, Simpson fails to teach or suggest any of the steps, recited in Claims 1 and 13, associated with the position sensor, for example, the step of determining a resistance value at the position sensor based on measured voltage at the position sensor; determining a temperature value at the position sensor based on the resistance value; and determining a sensitivity at the position sensor based on the temperature value. Stated differently, Simpson fails to remedy the underlying deficiencies of Stern.

More is directed to a method of measuring temperature differences on the order of micro-degrees centigrade, by utilizing predictable behavior in the relative time drift of thermal offset curves. More is relied on for the alleged teaching of applying a resistance drift compensation factor. More also fails to suggest or teach a position sensor and any of the steps associated with the position sensor. Instead, More merely teaches calibrating and optimizing among various electrical components. Thus, The alleged teaching of More does not remedy the underlying deficiencies of Stern and Simpson with respect to Claims 1 and 13.

Therefore, it is clear that the combined teaching of Stern, Simpson and More does not teach or suggest all the limitations recited in Claims 1 and 13.

"[O]bviousness requires a suggestion of all limitations in a claim." *CFMT, Inc. v. Yieldup Int'l Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003), and "a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does." *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007).

Based on the above discussion, Appellants respectfully submit that the disclosures of Stern, Simpson and More, even if combined in the manner proposed by the Examiner, fail to suggest all the limitations recited in Claim 1, from which Claims 2-12 and 14-21 depend. Appellants further respectfully submit that the disclosures of Stern, Simpson and More, even if combined in the manner proposed by the Examiner, fail to suggest all the limitations recited in Claim 13.

Therefore, Claims 1-5 and 9-13 are patentable over Stern, Simpson and More.

1.B. Claims 14 and 15 are additionally patentable over Stern, Simpson and More.

Claim 14, depending from Claim 13, further recites, "adjusting location information from the position sensor based on the sensitivity". Claim 15, depending from Claim 14, further recites, "adjusting position and orientation coordinates from the position sensor based on the sensitivity". As discussed above, both Stern and Simpson fail to teach or suggest, "determining a sensitivity at the position sensor based on the temperature value", as recited in Claim 13. Accordingly, both Stern and Simpson also fail to teach or suggest the above steps recited in Claims 14 and 15 based on the sensitivity determined at the position sensor.

More relates to a method and device for compensating electronic difference measurement systems for the effects of electronic component drift over time and temperature. Specifically, More compensates for sensor measurement errors due to component time and temperature drift (see Col. 5, Lines 60-62 of More). However, More fails to teach or suggest adjusting the location of a sensor based on the temperature sensitivity of the sensor.

Therefore, none of Stern, Simpson and More, taken alone or in combination, teach or suggest all the limitations recited in Claims 14 and 15. Accordingly, Appellants respectfully submit that Claims 14 and 15 are additionally patentable over Stern, Simpson and More.

In light of above analysis, Appellants respectfully submit that the rejection of Claims 1-5 and 9-15 under 35 U.S.C. § 103(a) as unpatentable over Stern in view of Simpson and further in view of More is improper and should be reversed.

2. The rejection of Claims 6-8 under 35 U.S.C. § 103(a) as unpatentable over Stern in view of Simpson, More and Acker is improper and should be reversed.

The combined teaching of Stern, Simpson, More and Acker does not teach or suggest all the limitations recited in Claims 6-8.

Claims 6-8, depending from Claim 1, recite at least all the limitations recited in Claim 1.

Stern, Simpson and More have been discussed above.

Acker was relied on by the Examiner to allegedly teach the additional limitations, such as AC magnetic field and temperature measurement signal, recited in Claims 6-8. Acker also fails to suggest or teach a position sensor and any of the steps associated with the position sensor. Instead, Acker merely discloses a magnetic position and orientation system using magnetic fields. Thus, the alleged teaching of Acker does not remedy the underlying deficiencies of Stern, Simpson and More with respect to Claim 1.

“[O]bviousness requires a suggestion of all limitations in a claim,” *CFMT, Inc. v. Yieldup Int’l Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003), and “a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.” *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007).

Based on the above discussion, Appellants respectfully submit that the disclosures of Stern, Simpson, More and Acker, even if combined in the manner proposed by the Examiner, fail to suggest all the limitations recited in Claim 1, from which Claims 6-8 depend.

Accordingly, the rejection of Claims 6-8 under 35 U.S.C. § 103(a) as unpatentable over Stern in view of Simpson, More and Acker is improper and should be reversed.

3. The rejection of Claims 16-21 under 35 U.S.C. § 103(a) as unpatentable over Stern in view of Simpson, More and Douglas is improper and should be reversed.

The combined teaching of Stern, Simpson, More and Douglas does not teach or suggest all the limitations recited in Claims 16-21.

Claims 16-21, depending from Claim 13, recite at least all the limitations recited in Claim 13.

Stern, Simpson and More have been discussed above.

Douglas is relied on to allegedly teach the additional limitations recited by claims 16-21, such as applying a resistance drift factor to the resistance value. Douglass teaches temperature detector systems and methods that are directly related to “integrated circuit temperature detection systems and methods” (*see*, Col. 1, Lines 35-37). Additionally, it is noted that Douglas is directed toward industrial applications such as temp-cycle test equipment, air conditioning, monitoring equipment and automatic systems such as process control systems (*see*, Col. 1, Lines 40-52). Douglas also fails to suggest or teach a position sensor and any of the steps associated with the position sensor. Thus, the alleged teaching of Douglas does not remedy the underlying deficiencies of Stern, Simpson and More with respect to Claim 13.



"[O]bviousness requires a suggestion of all limitations in a claim," *CFMT, Inc. v. Yieldup Int'l Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003), and "a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does." *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007).

Based on the above discussion, Appellants respectfully submit that the disclosures of Stern, Simpson, More and Douglas, even if combined in the manner proposed by the Examiner, fail to suggest all the limitations recited in Claim 13, from which Claims 16-21 depend.

Accordingly, the rejection of Claims 16-21 under 35 U.S.C. § 103(a) as unpatentable over Stern in view of Simpson, More and Douglas is improper and should be reversed.

#### **VIII. CONCLUSION**

Based on the arguments presented above, Appellants respectfully submit that the combined teaching of Stern, Simpson and More does not render Claims 1-5 and 9-15 on appeal obvious within the meaning of 35 U.S.C. § 103(a); the combined teaching of Stern, Simpson, More and Acker does not render Claims 6-8 on appeal obvious within the meaning of 35 U.S.C. § 103(a); and the combined teaching of Stern, Simpson, More and Douglas does not render Claims 16-21 on appeal obvious within the meaning of 35 U.S.C. § 103(a). Accordingly, Appellants respectfully submit the above rejections are in error and must be reversed.

Should any fees be required, authorization is hereby given to charge deposit account 19-

1013.

Respectfully submitted,

/Paul J. Esatto, Jr./

Paul J. Esatto, Jr.

Registration No. 30,749

Scully, Scott, Murphy & Presser, P.C.  
400 Garden City Plaza, Suite 300  
Garden City, New York 11530  
(516) 742-4343  
PJE/HC/ech

## **IX. CLAIMS APPENDIX**

**1. (Rejected)** A method for measuring temperature at a site within a patient during a medical procedure comprising the steps of:

providing a medical device having a position sensor for providing signals used in determining position and/or orientation coordinates of the position sensor;

placing the medical device within the patient and positioning the position sensor at the site;  
determining position and/or orientation coordinates of the position sensor based on the signals provided by the position sensor using a location system;

providing a temperature measurement signal to the position sensor;

measuring voltage at the position sensor;

determining a resistance value at the position sensor based on the temperature measurement signal provided to the position sensor and the voltage at the position sensor; and

determining a temperature value at the position sensor based on the resistance value at the position sensor.

**2. (Rejected)** The method according to Claim 1, further comprising determining the temperature value based on an algorithm.

**3. (Rejected)** The method according to Claim 2, further comprising providing a resistance drift factor to the resistance value in accordance with the algorithm.

**4. (Rejected)** The method according to Claim 1, further comprising generating an externally applied field at a desired site within the patient for performing the medical procedure at the desired site within the patient.

**5. (Rejected)** The method according to Claim 4, further comprising using a generator signal for generating the externally applied field, wherein the generator signal is at a different frequency than the temperature measurement signal.

6. **(Rejected)** The method according to Claim 5, wherein the generator signal is used to generate an AC magnetic field.
7. **(Rejected)** The method according to Claim 6, wherein the generator signal is 3 KHz.
8. **(Rejected)** The method according to Claim 7, wherein the temperature measurement signal is 4 KHz.
9. **(Rejected)** The method according to Claim 1, further comprising using a signal processor for measuring the voltage at the position sensor.
10. **(Rejected)** The method according to Claim 9, further comprising determining the resistance value using the signal processor.
11. **(Rejected)** The method according to Claim 10, further comprising determining the temperature value using the signal processor.
12. **(Rejected)** The method according to Claim 11, further comprising performing an ablation procedure at the site with the medical device.
13. **(Rejected)** A method for adjusting for temperature sensitivity of a medical device having a position sensor, the method comprising the steps of:
- providing a medical device having a position sensor for providing signals used in determining position and/or orientation coordinates of the position sensor;
  - determining position and/or orientation coordinates of the position sensor based on the signals provided by the position sensor using a location system;
  - measuring voltage at the position sensor;
  - determining a resistance value at the position sensor based on the measured voltage at the position sensor;
  - determining a temperature value at the position sensor based on the resistance value; and

determining a sensitivity at the position sensor based on the temperature value.

14. **(Rejected)** The method according to Claim 13, further comprising adjusting location information from the position sensor based on the sensitivity.

15. **(Rejected)** The method according to Claim 14, further comprising adjusting position and orientation coordinates from the position sensor based on the sensitivity.

16. **(Rejected)** The method according to Claim 15, further comprising determining the temperature value at the position sensor by applying a resistance drift factor to the resistance value.

17. **(Rejected)** The method according to Claim 16, further comprising recalling the resistance drift factor from a memory of a signal processor.

18. **(Rejected)** The method according to Claim 17, further comprising establishing the resistance drift factor from a resistance versus temperature profile of the position sensor.

19. **(Rejected)** The method according to Claim 15, further comprising determining the sensitivity at the position sensor by applying a sensitivity drift factor to the temperature value.

20. **(Rejected)** The method according to Claim 19, further comprising recalling the sensitivity drift factor from a memory of a signal processor.

21. **(Rejected)** The method according to Claim 20, further comprising establishing the sensitivity drift factor from a sensitivity versus temperature profile of the position sensor.

**X. EVIDENCE APPENDIX**

Not applicable.

## **XI. RELATED PROCEEDINGS APPENDIX**

Not applicable.